

MAGNETICALLY COUPLED LINEAR SERVO-DRIVE MECHANISMABSTRACT OF THE DISCLOSURE

The mechanism comprises a magnetically coupled drive  
5 mechanism for transporting semiconductor wafers in a semiconductor  
wafer processing system. The mechanism includes an actuator within a  
cylinder that contains a set of magnets that drive a complementary set of  
magnets inside a carriage along a linear path. The carriage is limited to  
linear motion via a linear ball slide. The magnets in the actuator and  
10 carriage are magnetically coupled in such a way as to prevent angular  
rotation of the magnets within the actuator. Accordingly, driving  
elements in the actuator can be moved via rotation of a ball screw shaft  
coupled to a ball nut affixed to the actuator magnets.